WHAT IS CLAIMED IS:

1. A method for creating a frozen tissue array, comprising the steps of:

selecting at least one frozen tissue core from a donor block;

inserting each of said at least one frozen core into a compartment of a single recipient block, wherein said recipient block is held at a temperature below the freezing point of said tissue;

adding an oil in a liquid form into said recipient block, wherein said oil has a freezing point lower than the freezing point of said tissue cores, said oil cooled to and added at a temperature lower than the freezing point of said tissue but higher than the freezing point of said oil thereby keeping said tissue cores frozen; and

cooling said recipient block containing said oil to a temperature of about equal to or below the freezing point of said oil, thereby freezing said oil, wherein the frozen oil locks said frozen cores in said recipient block to create said frozen tissue array without melting the tissue cores.

2. The method of claim 1, wherein said tissue core is from about 1.0 mm to about 3.0 mm in diameter.

3. The method of claim 2, wherein said tissue core is from about 2.5 mm to about 3.0 mm in diameter.

4. The method of claim 1, wherein said oil has a freezing point as low as about -10°C.

5. The method of claim 1, wherein the formation of compartments in said recipient block comprises the steps of:

filling a tissue mold with embedding medium; said embedding medium capable of being frozen therein, said frozen embedding medium forming a recipient tissue block;

placing a cryoarray device into said tissue mold containing said embedding medium but prior to freezing said embedding medium, said cryoarray device comprising:

a mold plate having an upper and a lower surface;

mold alignment pins to direct placement of the cryoarray device into said tissue mold, said mold alignment pins perpendicularly attached to the lower surface of said mold plate,

an ejector plate having an upper surface and a lower surface, said plate comprising holes between said upper surface and said lower surface;

ejector pins, said ejector pins comprising ejector thumb pads attached to an upper surface of said pins, said ejector pins connecting said mold plate and said ejector plate, wherein said ejector pins are capable of lowering and of raising said ejector plate; and

cryoarray pins, said cryoarray pins connected operably to said mold plate and equal in number to said holes in said ejector plate and aligned with said holes in said ejector plate wherein said cryoarray pins move through said holes ;

freezing said embedding medium in said tissue mold around said cryoarray pins; and

lowering said ejector plate to separate said cryoarray device from said frozen embedding medium; said cryoarray pins creating compartments into said recipient block upon separation of said cryoarray device from said recipient block.

6. The method of claim 5, wherein said embedding material is frozen at a temperature of about –20 °C to about –80 °C.

7. The method of claim 5, wherein said embedding medium is O.C.T.™ compound.

8. A method for preparing tissue for assays, comprising the steps of:

preparing a frozen tissue array as in claim 1;

cutting sections from said array; and

assaying said sections.

9. The method of claim 8, wherein said tissue assay is selected from the group consisting of morphologic evaluation, *in situ* hybridization, immunohistochemistry, *in situ* polymerase chain reaction and fluorescence *in situ* hybridization.

10. A method for creating a frozen tissue array, comprising the steps of:

adding an oil in a liquid form into at least one compartment of a recipient block prior to inserting a frozen tissue core into said compartment; wherein said recipient block is held at a temperature below the freezing point of said frozen tissue core; said oil having a freezing point lower than the freezing point of said tissue core; wherein said oil is cooled to and added at a temperature lower than the freezing point of said tissue core and less than or equal to the temperature of said recipient block but higher than the freezing point of said oil;

selecting at least one frozen tissue core from a donor block, said donor block held at a temperature less than the freezing point of said tissue contained within said block and less than or equal to the temperature of said recipient block;

inserting each of said at least one frozen tissue core into said compartment of a single recipient block containing said oil thereby keeping said tissue cores frozen; and

cooling said recipient block containing said oil and said frozen tissue cores to a temperature of about equal to or below the freezing point of said oil, thereby freezing said oil, wherein the

frozen oil locks said frozen cores in said recipient block to create said frozen tissue array without melting the tissue cores.

11. The method of claim 10, wherein said tissue core is from about 1.0 mm to about 3.0 mm in diameter.

12. The method of claim 11, wherein said tissue core is from about 2.5 mm to about 3.0 mm in diameter.

13. The method of claim 10, wherein said oil has a freezing point as low as about -10°C.

14. The method of claim 10, wherein the formation of compartments in said recipient block comprises the steps of:

filling a tissue mold with embedding medium; said embedding medium capable of being frozen therein, said frozen embedding medium forming a recipient tissue block;

placing a cryoarray device into said tissue mold containing said embedding medium but prior to freezing said embedding medium, said cryoarray device comprising:

a mold plate having an upper and a lower surface;

mold alignment pins to direct placement of the cryoarray device into said tissue mold, said mold alignment pins perpendicularly attached to the lower surface of said mold plate,

an ejector plate having an upper surface and a lower surface, said plate comprising holes between said upper surface and said lower surface;

ejector pins, said ejector pins comprising ejector thumb pads attached to an upper surface of said pins, said ejector pins connecting said mold plate and said ejector plate, wherein said ejector pins are capable of lowering and of raising said ejector plate; and

cryoarray pins, said cryoarray pins connected operably to said mold plate and equal in number to said holes in said ejector plate and aligned with said holes in said ejector plate wherein said cryoarray pins move through said holes;

freezing said embedding medium in said tissue mold around said cryoarray pins; and

lowering said ejector plate to separate said cryoarray device from said frozen embedding medium; said cryoarray pins creating compartments into said recipient block upon separation of said cryoarray device from said recipient block.

15. The method of claim 14, wherein said embedding material is frozen at a temperature of about –20 °C to about –80 °C.

16. The method of claim 14, wherein said embedding medium is O.C.T.™ compound.

17. A method for preparing tissue for assays, comprising the steps of:

preparing a frozen tissue array as in claim 10;

cutting sections from said array; and

assaying said sections.

18. The method of claim 8, wherein said tissue assay is selected from the group consisting of morphologic evaluation, *in situ* hybridization, immunohistochemistry, *in situ* polymerase chain reaction and fluorescence *in situ* hybridization.